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10/782,381

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EXAMINER

GHULAMALI, QUTBUDDIN

ART UNIT

PAPER NUMBER

2611

MAIL DATE

DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/782,381

Applicant(s)

BERTINELLI ET AL.

Examiner

Qutub Ghulamali

Art Unit

2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 April 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-46 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-46 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

DETAILED ACTION

Acknowledgement

1. This Office Action is responsive to the Amendment first filed on 04/27/2007.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 2, 5, 7, 9-11, 13-15, 25, 27, 35, 39, 41 and 45 rejected under 35 U.S.C. 103(a) as being unpatentable over Haoui et al (USP 5,742,640).

Regarding claim 1, Haoui discloses a method comprising:

a sending device computing error detection bits based on both protected bits to be wirelessly communicated over a protected channel and also other bits to be wirelessly communicated over another channel (Haoui discloses the use of both wired and wireless communication between a sending device (base) and receiving device (cellular) (col. 5, lines 5-16, 35-45; col. 6, lines 46-64; col. 7, lines 55-67; col. 8, lines 1-31); and
the sending device transmitting the error detection bits (fig. 5A; 7-bit CRC is used for error correction and is transmitted with the protected bits on a protected channel, class

Art Unit: 2611

1 bits, 132) with the protected bits on the protected channel and transmitting the other bits on the other channel (class 2 bits, 138) (col. 8, lines 15-31; col. 11, lines 30-42). Even though Haoui does not use the word "only" in disclosing use of different channels. Haoui however, further discloses that a radio and such controller (RSC) channel may be selected for example based upon factors such as availability, type of service required and coding standard used to code communication signals (protective coding or non-protective coding etc.) and further goes on to disclose that it is possible to utilize different RSC channels to provide different coder services: FAX modem on one channel, data modem on another, and voice coding on yet another channel, moreover, different voice standards (algorithms), FAX modem standards or data modem standards may be implemented in different channels. Therefore, those skilled in the art will readily understand the transmission of signals using error detection bits with protected bits on one channel to protect the encoded communication signals during radio transmission and transmit the other bits, less perpetually significant bits, on another channel, as an obvious choice as disclosed in Haoui (col. 11, lines 35-45, 58-67; col. 12, lines 1-5) (the use of separate channels, such as one for a protected channel and the other for an unprotected channel is referenced in art to Millar (USP 5,121,395), fig. 1, 2, col. 2, lines 27-67).

Regarding claim 2, Haoui discloses a receiving device receiving the detection bits and the protected bits on the protected channel (class 1) and the other bits (unprotected bits, class 2) on the other channel (col. 9, lines 28-55; col. 11, lines 27-34); and the receiving device detecting errors based on the protected bits and the other bits using, the detection bits (FEC encoded protected bits) (col. 11, lines 35-45).

As to claim 5, Haoui discloses the other bits are conveyed by a control channel used to decode a further channel and the protected channel is better protected than the further (other) channel (because the convolutional encoder 131 protects the more vulnerable class 1 bits 132 of the speech coder) (col. 13, lines 6-22).

As to claims 7, 12 Haoui discloses the channel used to convey the other bits (the other bits are the error correction bits) and the protected channel are both control channels used to decode a further channel (because the convolutional encoder 131 protects the more vulnerable class 1 bits 132 of the speech coder) (col. 8, lines 1-31).

As to claim 9, Haoui discloses the protected channel is time multiplexed with the further (other) channel (col. 8, lines 33-41).

As per claim 10 Haoui discloses the protected channel is code (the encoded 87 bits to 165 bits) multiplexed with the further (other) channel (col. 8, lines 33-41).

Regarding claim 35, Haoui discloses a method comprising: using both protected symbols (class I bits or symbols) for transmission over a protected channel (channel I) and unprotected symbols (class II bits or symbols) for transmission

Art Unit: 2611

over an unprotected channel (channel II) in providing error detection symbols for transmission over said protected channel (col. 7, lines 50-67; col. 8, lines 1-14); and sending said error detection symbols (FEC) along with said protected symbols on said protected channel and said unprotected symbols on said unprotected channel to a receiver (subscriber unit 60, fig. 3) Even though Haoui does not use the word "only" in disclosing use of different channels. Haoui however, further discloses that a radio and such controller (RSC) channel may be selected for example based upon factors such as availability, type of service required and coding standard used to code communication signals (protective coding or non-protective coding etc..) and further goes on to disclose that it is possible to utilize different RSC channels to provide different coder services: FAX modem on one channel, data modem on another, and voice coding on yet another channel, moreover, different voice standards (algorithms), FAX modem standards or data modem standards may be implemented in different channels. Therefore, those skilled in the art will readily understand the transmission of signals using error detection bits with protected bits on one channel to protect the encoded communication signals during radio transmission and transmit the other bits, less perpetually significant bits, on another channel, as an obvious choice as disclosed in Haoui (col. 11, lines 35-45, 58-67; col. 12, lines 1-5) (col. 7, lines 50-67; col. 8, lines 1-14, 15-31).

As per claims 11 and 25, Haoui discloses the protected channel is a traffic channel (considered as a dedicated communication channel inherently implied) (col. 6, lines 55-60).

As to claim 13, Haoui discloses error detection bits are computed using a CRC-cyclic redundancy check code (col. 8, lines 1-31).

Regarding claims 14 and 15, Haoui discloses computer readable storage structure (microprocessor or DSP) embodying computer program Code thereon for execution by a computer processor in a telecommunication device, wherein said computer program code includes instructions for performing the method of claim 1 (col. 14, lines 20-48).

Regarding claims 39 and 45, Haoui discloses an apparatus comprising:
a cyclic redundancy check calculator(CRC circuit 140 computes a CRC code), for providing error detection symbols for transmission over a protected channel using both protected symbols for transmission over the protected channel and unprotected symbols for transmission over an unprotected channel (co8, lines 1-21); and
a transport channel multiplexer (the two slot interleaver 134 provides time multiplexing) and physical channel mapper (frames or maps data into two adjacent time slots), for sending said error detection symbols along with said protected symbols on said protected channel and said unprotected symbols on said unprotected channel to a receiver Even though Haoui does not use the word "only" in disclosing use of different channels. Haoui however, further discloses that a radio and such controller (RSC) channel may be selected for example based upon factors such as availability, type of service required and coding standard used to code communication signals (protective coding or non-protective coding etc.,) and further goes on to disclose that it is possible to utilize different RSC channels to provide different coder services: FAX modem on one

Art Unit: 2611

channel, data modem on another, and voice coding on yet another channel, moreover, different voice standards (algorithms), FAX modem standards or data modem standards may be implemented in different channels. Therefore, those skilled in the art will readily understand the transmission of signals using error detection bits with protected bits on one channel to protect the encoded communication signals during radio transmission and transmit the other bits, less perpetually significant bits, on another channel, as an obvious choice as disclosed in Haoui (col. 11, lines 35-45, 58-67; col. 12, lines 1-5) (col. 8, lines 1-14, 32-41; col. 9, lines 3-10).

Regarding claim 41, Haoui discloses a method comprising:

receiving protected bits on a protected channel and other bits on another channel (col. 7, lines 50-64); and

detecting errors in the protected bits and the other bits based on error detection bits included only in the protected bits Even though Haoui does not use the word "only" in disclosing use of different channels. Haoui however, further discloses that a radio and such controller (RSC) channel may be selected for example based upon factors such as availability, type of service required and coding standard used to code communication signals (protective coding or non-protective coding etc..) and further goes on to disclose that it is possible to utilize different RSC channels to provide different coder services: FAX modem on one channel, data modem on another, and voice coding on yet another channel, moreover, different voice standards (algorithms), FAX modem standards or data modem standards may be implemented in different channels. Therefore, those skilled in the art will readily understand the transmission of signals using error detection

Art Unit: 2611

bits with protected bits on one channel to protect the encoded communication signals during radio transmission and transmit the other bits, less perpetually significant bits, on another channel, as an obvious choice as disclosed in Haoui (col. 11, lines 35-45, 58-67; col. 12, lines 1-5) (unprotected bits) (col. 7, lines 65-67; col. 8, lines 1-14).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 3, 16-18, 19, 21, 23-24, 26-31, 33-34, 36, 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haoui et al (USP 5,742,640).

Regarding claims 16, 28 and 36, the steps claimed as apparatus is nothing more than restating the function of the specific components of the method as claimed above and therefore, it would have been obvious, considering the aforementioned rejection for the method claim 1, to a person skilled in the art the time of invention was made to present it in an alternate way so as to achieve secure communication results.

Regarding claim 43, the steps claimed as apparatus is nothing more than restating the function of the specific components of the method as claimed above and therefore, it would have been obvious, considering the aforementioned rejection for the method claim 41, to a person skilled in the art the time of invention to present it in an alternate way so as to achieve the desired secured communication results.

As to claim 27, Haoui discloses error detection bits are computed using a CRC-cyclic redundancy check code (col. 8, lines 1-31).

As to claims 17 and 30, Haoui discloses device is a user equipment device (subscriber units) (col. 3, lines 6-22).

As to claims 18 and 29, Haoui discloses device is an access point of a telecommunications network (a cell base station communicates simultaneously with numerous subscriber units) (col. 3, lines 6-20).

As to claim 19, Haoui discloses the other bits are conveyed by a control channel used to decode a further channel and the protected channel is better protected than the further (other) channel (col. 13, lines 6-22).

As to claims 21, 26, Haoui, discloses the channel used to convey the other bits (the other bits are the error correction bits) and the protected channel are both control channels used to decode a further channel (because the convolutional encoder 131 protects the more vulnerable class 1 bits 132 of the speech coder) (col. 8, lines 1-31).

As to claim 23, Haoui discloses the protected channel is time multiplexed with the further (other) channel (col. 8, lines 33-41).

As per claim 24, Haoui, discloses the protected channel is code (the encoded 87 bits to 165 bits) multiplexed with the further (other) channel (col. 8, lines 33-41).

As to claim 27, Haoui discloses error detection bits are computed using a CRC-cyclic redundancy check code (col. 8, lines 1-31).

As to claims 3 and 31, Haoui discloses wherein bits on a channel are wirelessly communicated in frames (Haoui discloses the use of both wired and wireless

communication between a sending device (base) and receiving device (cellular) (col. 5, lines 5-16, 35-45; col. 6, lines 46-64; col. 7, lines 55-67), further comprises means for discarding at least some bits (bits that are in error or are incorrect) of a frame if an error is detected in the other bits communicated on the other channel and for discarding the bits without adding them to a buffer for soft combining and requesting retransmission to replace discarded bits (col. 8, lines 20-31).

As per claims 33 and 34, Haoui discloses communication among several wireless communication devices, such as associated with numerous cell base stations and mobile communication centers (col. 3, lines 7-22).

6. Claims 4, 6, 8, 20, 22, 32, 37-38, 40, 42, 44 and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haoui et al (USP 5,742,640) in view of Seidel et al (US Pub. 2004/0062222).

Regarding claims 6, 20, Haoui, discloses all limitations of the claim, including further channel is a traffic channel (protected channel, col. 7, lines 59-64) except does not explicitly disclose other bits include bits indicating transport format combination indicator (TFCI). Seidel, however, discloses other bits include bits indicating transport format combination indicator (fig. 1; page 2, section 0036; page 4, section 0054). It would have been obvious to a person of ordinary skill in the art at the time of invention to use TFCI as taught by Seidel in the system of Haoui because it can enhance possible data rate allocation by base station of mobile station.

Regarding claims 8, 22, 37, 38, 40, 42, 44 and 46, Haoui, discloses all limitations of the claim, including the protected channel is an outband signaling channel (channel that carries signaling or error correction bits protected separately from the data bits; col. 7, lines 59-64; col. 8, lines 1-14) except does not explicitly disclose other bits include bits indicating transport format combination indicator (TFCI). Seidel, however, discloses other bits include bits indicating transport format combination indicator (fig. 1; page 2, section 0036; page 4, section 0054). It would have been obvious to a person of ordinary skill in the art at the time of invention to use TFCI as taught by Seidel in the system of Haoui because it can enhance possible data rate allocation by base station of mobile station.

As to claims 4 and 32, Haoui, discloses all limitations of the claim, including the bits that are discarded in case of an error are the bits conveyed by data channel frame channel (col. 7, lines 20-31) except does not explicitly disclose other bits include bits indicating transport format combination indicator (TFCI). Seidel, however, discloses other bits include bits indicating transport format combination indicator (fig. 1; page 2, section 0036; page 4, section 0054). It would have been obvious to a person of ordinary skill in the art at the time of invention to use TFCI as taught by Seidel in the system of Haoui because it can enhance possible data rate allocation and provide error correction by base station of mobile station.

Response to Remarks/Arguments

7. Applicant's remarks/arguments, see pages 10-12, filed 04/27/2007, with respect to the rejection(s) of claim(s) 1-46 under 35 U.S.C. 102(b) and 35 U.S.C. 103(a) have been fully considered but they are not persuasive. The response to applicant's remarks follow:

The applicant mainly remarks, with reference to the amended claims 1, 16, 28, 35, 36, 39, 41, 43 and 45, that Haoui fails to recite sending error detection bits with the protected bits only on the protected channel and transmitting other bits on other channel.

The examiner after a careful review disagrees with applicant's remarks and offers the following explanation.

Art Unit: 2611

Haoui discloses the sending device transmitting the error detection bits (fig. 5A; 7-bit CRC is used for error correction and is transmitted with the protected bits on a protected channel, class 1 bits, 132) with the protected bits on the protected channel and transmitting the other bits on the other channel (class 2 bits, 138) (col. 8, lines 15-31; col. 11, lines 30-42).

The examiner points out that even though Haoui does not use the word "only" in disclosing use of different channels, Haoui, however, further discloses that a radio and such controller (RSC) channel may be selected for example based upon factors such as availability, type of service required and coding standard used to code communication signals (protective coding or non-protective coding etc.,) and further goes on to disclose that it is possible to utilize different RSC channels to provide different coder services: FAX modem on one channel, data modem on another, and voice coding on yet another channel, moreover, different voice standards (algorithms), FAX modem standards or data modem standards may be implemented in different channels. Therefore, those skilled in the art will readily understand the transmission of signals using error detection bits with protected bits on one channel to protect the encoded communication signals during radio transmission be utilized and also transmit the other bits, less perpetually significant bits, on another channel that is available from among the three RSC channels, as an obvious choice as disclosed in Haoui (col. 11, lines 35-45, 58-67; col. 12, lines 1-5). The examiner finds that Haoui discloses the limitation of only transmitting the protected bits on one channel and the other not so significant bits on another channel as claimed.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US Patents:

US Patent 6,680,967 to Westman.

US Patent 7,016,430 to Grivna et al.

US Patent 4,715,045 to Lewis et al.

US Patent 6,697,629 to Grilli et al.

US Patent 6,801,580 to Kadous.

US Patent 7,012,883 to Jalali et al.

US Pub. 2002/0021682 to Ariyoshi et al.

US Patent 6,994,206 to Dent.

US Patent 7,027,518 to Mikkola et al.

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within

Art Unit: 2611

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

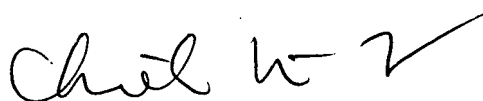
10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Qutub Ghulamali whose telephone number is (571) 272-3014. The examiner can normally be reached on Monday-Friday, 7:00AM - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh M. Fan can be reached on (571) 272-3042. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

QG.
July 23, 2007.



CHIEH M. FAN
SUPERVISORY PATENT EXAMINER